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WITNESS my hand this
Second day of November 2004

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QUALITATIVE DATA ANALYSIS SYSTEM AND METHOD**FIELD OF INVENTION**

The present invention relates to the field of qualitative data analysis. In one aspect, the present invention relates to a system, method and schema relating to the analysis of data collected in commercial research projects, such as group discussions and in-depth interviews, etc.

BACKGROUND ART

The Inventor has found that in conducting research, the result gathered needs to be analysed so that insight, interpretations and conclusions can be distilled from the research conducted. A number of software products exist which assist researchers in handling and interpreting relatively complex data, but they are considered only generally suitable for thorough and time-consuming work in an academic context.

The Inventor has also found that researchers involved in commercial research projects, on the other hand, generally have tighter research guidelines, less structured data and less time for analysis. Researchers conducting these commercial projects generally rely on manual methods of analysis or using standard office packages, like 'word'.

The Inventor has further found that a research project generally has three phases, the first being Conducting Groups and / or Interviews, the second being Collecting and Sorting, and the third being Analysing, Interpreting data and Reporting findings to a Client. Time pressures are a common problem in this type of research, and due to the commercial nature of the research, work plans tend to be changeable, which means that researchers may work on several projects at the one time. Sometimes, a researcher is forced to change the approach taken to the research analysis due to the time available for the project. For example, the researcher may prefer to work by reviewing audio or video together with detailed text of a focus group or in-depth interview, but may not be able to do so within the constraints of the project time frame available.

Furthermore, projects vary both in size and design. They may comprise any number of respondents, such as focus groups (including mini-groups) and / or in-depth interviews and / or small surveys. Researchers use a number of

techniques to assist them in discovering the information the client requires, such as:

5 • Projective Techniques - techniques used to stimulate discussion among participants. Participants are encouraged to attribute their feelings, beliefs or motivations to another person, object or situation. Examples of projective techniques are word association, sentence completion, expressive drawing and thematic apperception tests (bubble drawings),

10 • Association Technique - is a form of projective technique where participants are presented with some stimulus material and they are then asked to respond with the first thing that comes to their minds, and

15 • Completion Technique - is a form of projective technique where participants are asked to complete an incomplete situation.

Any discussion of documents, devices, acts or knowledge in this specification is included to explain the context of the invention. It should not be taken as an admission that any of the material forms a part of the prior art base or the common general knowledge in the relevant art in Australia or elsewhere on or before the priority date of the disclosure and claims herein.

It is an object of the present invention to provide an improved marketing research tool for use by researchers in conducting qualitative data analysis.

20 It is also an object of the present invention to alleviate at least one disadvantage associated with the prior art.

SUMMARY OF INVENTION

25 The present invention provides, in one aspect, a method of and / or device for inputting data into a qualitative research tool, the method comprising the step of inputting the data in association with a heading, such as a concept heading.

The present invention provides, in another aspect, a method of and / or device for inputting data into a qualitative research tool, the method comprising the step of inputting the data in Commentary format, such as an AVI format.

30 In a preferred embodiment, Commentary, such as AVI represents: Articulation which is substantially what the research participant said, preferably expressed in the words of the researcher,

Verbatim which is substantially a reproduction of substantially all, or a representative part, of a respondent's comment, such as a direct quotation fro a research participant, and

5 Interpretation which is substantially the researcher's observations, Interpretations and conclusions on what the research participants said.

The present invention provides, in still another aspect, a method of and / or device for analysing data input into a qualitative research tool, the method comprising the step of analysing the data input in accordance with commentary, such as AVI.

10 Preferably, the present invention enables the marking-up on an originally imported document.

The present invention provides, in still another aspect, a method of and / or device for inputting data into a qualitative research tool, the method comprising the step of defining relationships between data, based on unique Indicia.

15 The present invention provides, in still another aspect, a schema as herein disclosed.

Other aspects and preferred aspects are disclosed in the specification and/or defined in the appended claims, forming a part of the description of the invention.

20 In essence, it has been found that commentary, such as AVI substantially mimics the way that commercial researchers interpret the data. Also having features such as marking-up on original material, concept headings and brand/picture sort functions enable qualitative research analysis to be enhanced.

The present invention provides a number of advantages, such as:

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- Allowing a quick way to import research data;
- Providing for flexible identification of themes for a project,
- Allowing research data to be allocated to a theme(s),
- Allowing Interpretations to be recorded in an organised format and to provide an insight into proceedings,

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- Allowing analysis to be ongoing as data is received,
- Allowing data from multiple researchers to be collected into one project,

- Providing for review of research data that has been already allocated as analysis data,
- Allowing verbatims to be recorded in an organised format while performing analysis,
- 5 • Provide for a flexible analysis framework that can be altered in line with findings,
- Providing a structured approach to working with commonly used QMR techniques,
- Further scope of applicability of the present invention will become apparent
- 10 from the detailed description given hereinafter. However, it should be understood that the detailed description and specific examples, while indicating preferred embodiments of the invention, are given by way of illustration only, since various changes and modifications within the spirit and scope of the invention will become apparent to those skilled in the art from this detailed description.

15 **DESCRIPTION OF DRAWINGS**

Further disclosure, objects, advantages and aspects of the present application may be better understood by those skilled in the relevant art by reference to the following description of preferred embodiments taken in conjunction with the accompanying drawings, which are given by way of illustration only, and thus are not limitative of the present invention, and in which:

Figure 1 illustrates an overview of the product features of the marketing research tool according to the present invention,

Figure 2 illustrates a logical representation of the marketing research tool according to the present invention,

25 Figure 3 illustrates data entered and / or formatted according to AVI, and

Figure 4 illustrates schematically an example use of the present invention.

DETAILED DESCRIPTION

OVERVIEW

Figure 1 illustrates schematically an overview of the marketing research tool according to the present invention. A schema providing a substantial enabling disclosure of the present invention is provided below. Various functions (often implemented as screens) of the embodiment are schematically

represented. The present invention should not be limited to only these screens, as screens may be deleted, added or re-configured according to the particular use of the present invention.

5 The research tool 101 has a project or template function 102. This function facilitates configuration of:

- new project or template definitions which is freshly used for each project. In essence a new file is created,
- project or template properties, which facilitates the set up of background information to the project in a manner that enables it to be used as a reference, such as project name, client contact, researcher, verbatim style, etc.

10 The import function 103 facilitates the import of external artefacts, such as client briefs, proposals, transcripts or merging of projects or templates. In one embodiment, this function is performed by:

- 15 1. User selects to import a data file
2. System displays list of import file types
3. User accepts default file type
4. User accepts default Import File ID
5. User continues

20 6. System validates Import File ID

7. System imports the file
8. System opens the new Import Data File

25 One aspect of the present invention relates to a user being able to optionally mark-up sections of data in an imported document. The process is marked on the original material. This marking function allows certain or selected data to be allocated to a selected heading, commentary or AVI. The mark-up is performed by highlighting the desired text, then it is visually changed, and then a copy/paste function is performed. The function enables a user to know what areas have been covered and it assists in the promotion of data to the correct area. Researcher's interpretation can be input at the same time as data is collected. The document records the mark-ups in a manner that enables the 30 mark-up to be identifiable. In one embodiment, this function is performed by:

1. User selects data
2. User selects to apply a mark-up
3. System marks up the selected data.

5 The project explorer function 104 facilitates navigation of various project components and application functions.

10 The document function 105 facilitates searching, printing or marking up of various documents.

15 The report function 106 facilitates the creation of reports or presentations which can be saved in a prescribed manner. It enables the outputs to be edited as desired.

20 The Respondents function 107 facilitates configuration of:

- Respondents which define the sample which has sample characteristics, and the characteristics have values for the data sets.
- New/Edit Respondents allows creation or modification of respondents.

25 The Sample Characteristics function 108 facilitates configuration of:

- Sample characteristics which define the attributes of the sample, such as those based on demographic or other information. They facilitate the creation of sub-samples, which enables the comparison of sets of data.
- New/Edit Sample Characteristics which allows editing or creation of new sample characteristics.
- Assign Characteristic values which enable certain values to be assigned to a data set for each sample.

30 The Sub-samples function 109 facilitates the configuration of various samples into sub-groupings based on a shared value.

The Analysis function 110 facilitates configuration of:

- Interpretations which are the researcher's observations and conclusions on what the research participants said, and
- Analysis frameworks which facilitates the process by which sense and meaning are made of the data, gathered in qualitative research, and by which the emergent knowledge is applied to the client's problems. Through processes of revisiting and immersion in the data, and through

5 complex activities of structuring, re-framing or otherwise exploring it, the researcher looks for patterns and insights relevant to the key research issues and uses these to address the client's brief. A framework can be applied in a general sense i.e. a generic framework or be specific to a particular type of data/research technique e.g. concept, brand, picture sort framework. A concept analysis framework facilitates the analysis of an idea/concept or set of ideas. This might be used to develop a new product or service, or an extension or amendment to an existing one. A brand analysis framework facilitates the division of brands into discrete segments
10 based on shared characteristics/requirements/needs/benefits/etc. A picture Sort analysis framework facilitates the division of pictures by brands based on shared characteristics/requirements/needs/benefits/ etc.

15 In accordance with an aspect of Invention, a concept heading is provided, such as illustrated in Figure 2, below. This is associated with Analysis 110 of Figure 1. The concept heading function 214 has been found to give support to additional problem statement(s). This can be used to track the evolution of a concept based on feedback from research participants. The concept heading may comprise a concept and predecessor concept, which provides traceability.

20 In accordance with one embodiment of the Analysis function, if a User wants to add a hierarchical heading to a generic or concept Analysis Framework, then

- 25 1. User selects a hierarchical heading
2. User selects to add a heading
3. System displays;
4. Image style
5. Heading Name
6. User enters Heading text (mandatory).
7. User continues
8. System validates that heading name is unique within headings of the
30 same parent.
9. System adds the new heading

Furthermore, in accordance with the Analysis function, if a User wants to modify a concept heading, then:

1. User selects a concept heading
2. User selects to modify the concept heading
3. System displays:
 - System displays the concept heading style
 - System displays the concept heading Samples
 - System displays the concept heading text
 - System displays heading image – only if 'picture style' heading defaults
4. User modifies one or more of the following:
 - Changes the heading text (mandatory field)
 - Changes the heading style (mandatory field)
 - Adds Sample(s) to associate to the Concept (mandatory field).
5. User continues
6. System validates that heading text is unique within the concept headings of the Analysis Framework
7. Concept is modified

Furthermore, In accordance with the Analysis function, If a User wants to evolve a concept heading to a new concept from one or more predecessor(s), or terminate a concept, then:

1. User selects one or more existing concept headings
2. User selects to evolve to a single concept heading
3. User enters evolution interpretation(s)
4. System displays for the new concept heading:
 - Predecessor concept heading(s) (selected concept headings from step 1)
 - System displays default heading style
 - System displays default Samples
 - System displays default heading text
 - System displays default heading image – only if 'picture style' heading defaults
5. System creates new Concept heading, setting up relationships

In accordance with another aspect of Invention, a brand/sort function is provided. This is also associated with Analysis 110 of Figure 1. The brand/sort function provides a unique problem statement, such as a statement of a commercial problem or issue. It is used to define relationships.

5 In accordance with the Analysis function, if a User wants to replace or replace the heading text or the associated heading image, which facilitates a brand / picture sort function, then:

1. User selects 'parent' or 'child' heading
2. User selects to modify the heading text
- 10 3. User modifies the text of the heading
4. User continues
5. System validates heading text
6. System checks for related data
7. System displays message – all related data will also be updated
- 15 8. User acknowledges message
9. System updates heading and any related data

Furthermore, in accordance with the Analysis function, if a User wants to add a commentary, such as an AVI, to a sub-sample/ heading, then:

1. User selects;
- 20 • Sub-Sample
- 'Heading' (any type)
2. User selects to add either an Articulation, Verbatim or Interpretation
3. User enters text (mandatory)
4. User continues
- 25 5. System adds the AVI
6. Optional: repeat step 2 –5 to add any additional AVIs for the same SubSample/Heading

Again, in Figure 1, the Query screen 111 comprises various screens which 30 enable the Interrogation of data and/or project information. In accordance with still another aspect of Invention the query function 111, as illustrated in Figure 1, provides a query by heading against commentary or AVI or query against

heading. In accordance with one embodiment, the query function is performed by:

1. User selects to create one of the following query types
 - Query AVI/Commentary
 - Query Segment/Sort
 - Query AVI/Commentary Text
2. System sets default query parameters

Furthermore, in accordance with the Query function, if a User wants to query other notation, headings, concepts or indicia, a query function is able to be established, such as by selecting an appropriate filter to be applied to the data field, corresponding to the query to be undertaken.

AVI

In the prior art, the research data has been introduced into the research tool in one large 'dump' of information. The research data would be then be investigated and interpreted/amended in order to give the research output. This requires a large amount of time and analysis. The present invention has been developed to be more aligned with the needs of commercial researchers.

In accordance with one aspect of the present invention, research data is input in accordance with Commentary, such as Articulation, Verbatim or Interpretation (AVI). In Figure 1, this feature is associated with Analysis 110 and its associated Analysis Framework, and in Figure 2, as described below, a logical representation of this feature is illustrated.

Figure 3, however, provides some more detailed in which the AVI 301 comprises:

- 25 • Articulation 302, which is substantially what the research participant said, preferably expressed in the words of the researcher,
- Verbatim 303, which is substantially a reproduction of substantially all, or a representative part, of a respondent's comment, such as a direct quotation from a research participant, and
- 30 • Interpretation 304, which is substantially the researcher's observations and conclusions on what the research participants said.

The advantage of entering and/or formatting input data in accordance with AVI is that the research data can be analysed and / or queried as the data is gathered. This provides time benefits in reporting and interpreting the data, and enables the researcher to modify (if necessary) the research as it is conducted.

5 The present invention gives a relatively immediate analysis response/interpretation of the research that is conducted. Thus the research may be able to be adjusted, if necessary.

It has been found that AVI substantially mimics the way that commercial researchers interpret the data.

10 Turning to Figure 2, it provides a representation of the functional relationship of various data entities of the present invention together with a legend.

15 In explaining the relationships represented by Figure 2, the application is represented by 200. A project 201 represents a qualitative research study commissioned by a client and completed by a researcher or team of researchers. Users are able to create a project 201 to store information about their research project and enter and analyse data emerging from the research. As can be seen in Figure 2, in accordance with one aspect of the present invention, information input (research data) into the research tool is input in association with a heading 212 and its associated structure.

20 Each project 201 can be accessed by zero to M persons 202, may have zero to M sample characteristics 203 (a sample characteristic representing information known about a sample (e.g. Gender) or attributed to a sample (eg product usage. It includes demographics, psychographics and lifecycle/life stage classification), may have zero to M respondents, such as groups/individuals 204, each of which may have one to M sample characteristic values 205 (being valid options defined for a sample) and / or one to M sub-samples 206 (a sub-set of a project sample). The sub-sample may have one to M sample characteristic values 205 as well as zero to M Commentary, such as AVI 211(Articulation / Verbatim / Interpretation).

30 Articulation is considered to be what the research participant said, expressed in the words of the researcher.

Verbatim is a reproduction of all, or a representative part, of a respondent's comment and / or a direct quotation from a research participant.

Interpretation is a researcher's observations and conclusions (the outcome or result; the Interpretations of the data in the light of the research objectives) on what the research participant said.

Each project may have zero to M analysis frameworks 207 and zero to M Interpretations 208.

The sub-sample may have zero to M heading groups 209 (each of which may have at least two heading group headings 210 and two or more headings 212).

Each heading group heading 210 may have zero to M AVI 211.

Each analysis framework 207 may have zero to M headings 212 (which in turn may have zero to M heading group headings 210), zero to M hierarchical headings 213 (each of which may have zero to M AVI and zero to M interpretations 208), zero to M concept headings 214 (each of which may have zero to M hierarchical headings, and zero to M Interpretations 208) and zero to M Interpretations 208.

A sub-sample 215 may have zero to M concept headings.

Figure 4 provides a relatively simple representation of the use of the present invention. A project is created 401, and then a query 402 is raised as to whether the project has any artefacts. Artefacts can be stored at 403. The qualitative research is then conducted 404, and data is collected. Any online research data can be stored 406, otherwise, one or more analysis frameworks can be completed 407, followed by analysis 408 (perhaps on-line) as required, and as described above. A reporting framework 409 can thereafter be completed, and exported 410. The report can be reported to the client 411, and if necessary, further analysis 412 can be conducted.

Schema

According to a further aspect of invention, another preferred embodiment is described, in the form of a schema according to an embodiment of the present invention:

```
<?xml version="1.0" encoding="utf-8" ?>
```

```
<xss:schema targetNamespace="http://qsr.com.au/XSight.xsd"
  xmlns="http://qsr.com.au/XSight.xsd"
  xmlns:mstns="http://qsr.com.au/XSight.xsd"
  xmlns:xs="http://www.w3.org/2001/XMLSchema"
  5           xmlns:msdata="urn:schemas-microsoft-com:xml-msdata"
  version="1.0">
  <xss:element name="Project">
    <xss:complexType>
      <xss:sequence>
        10      <xss:element name="Title" type="xs:string"
        nullable="false" />
        <xss:element name="Description"
        type="xs:string" nullable="false" />
        <xss:element name="CommissioningClient"
        15      type="xs:string" nullable="false" />
        <xss:element name="OnBehalfOfClient"
        type="xs:string" nullable="false" />
        <xss:element
        name="VerbatimQuotationCharacterEnabled" type="xs:boolean" nullable="false"
        20      />
        <xss:element
        name="VerbatimSampleCharacteristicIncluded" type="xs:boolean" nullable="false"
        />
        <xss:element
        25      name="VerbatimQuotationCharacter" type="xs:string" nullable="false" />
        <xss:element name="VerbatimItalics"
        type="xs:boolean" nullable="false" />
        <xss:element name="Password" type="xs:string"
        nullable="false" />
        30      <xss:element name="Hint" type="xs:string"
        nullable="false" />
        <xss:element name="Version" type="xs:string"
        nullable="false" />
```

14

```
    <xs:element name="Type" type="xs:string"
  nillable="false" />
        </xs:sequence>
    </xs:complexType>
5    </xs:element>
    <xs:element name="Person">
        <xs:complexType>
            <xs:sequence>
                <xs:element name="Identifier" type="xs:integer"
10   nillable="false" />
                <xs:element name="Name" type="xs:string"
nillable="false" />
                <xs:element name="Position" type="xs:string"
nillable="false" />
15   <xs:element name="Description"
type="xs:string" nillable="false" />
                <xs:element name="Role" type="xs:string"
nillable="false" />
                <xs:element name="PrimaryContact"
20   type="xs:boolean" nillable="false" />
                    </xs:sequence>
                </xs:complexType>
                <xs:key
name="PersonPrimaryKey"
msdata:PrimaryKey="true">
25   <xs:selector xpath="/" />
        <xs:field xpath="Identifier" />
    </xs:key>
</xs:element>
    <xs:element name="Document">
30   <xs:complexType>
        <xs:sequence>
            <xs:element name="Identifier" type="xs:integer"
nillable="false" />
```

15

```
    <xs:element name="Name" type="xs:string"
  nillable="false" />
    <xs:element name="Type" type="xs:string"
  nillable="false" />
5      </xs:sequence>
    </xs:complexType>
    <xs:key name="DocumentPrimaryKey"
  msdata:PrimaryKey="true">
      <xs:selector xpath="." />
10    <xs:field xpath="Identifier" />
      </xs:key>
    </xs:element>
    <xs:element name="SampleCharacteristic">
      <xs:complexType>
15      <xs:sequence>
          <xs:element name="Identifier" type="xs:integer"
  nillable="false" />
          <xs:element name="Name" type="xs:string"
  nillable="false" />
20      </xs:sequence>
      </xs:complexType>
      <xs:key name="SampleCharacteristicPrimaryKey"
  msdata:PrimaryKey="true">
          <xs:selector xpath="." />
25          <xs:field xpath="Identifier" />
          </xs:key>
        </xs:element>
        <xs:element name="SampleCharacteristicValue">
          <xs:complexType>
30          <xs:sequence>
              <xs:element name="Identifier" type="xs:integer"
  nillable="false" />
```

16

```
    <x:element name="Name" type="xs:string"
  nillable="false" />
    <x:element
  name="SampleCharacteristicIdentifier" type="xs:integer" nillable="false" />
5     </x:sequence>
    </x:complexType>
    <x:key      name="SampleCharacteristicValuePrimaryKey"
  msdata:PrimaryKey="true">
      <x:selector xpath=". />
10    <x:field xpath="Identifier" />
      </x:key>
      <x:keyref
    name="SampleCharacteristicSampleCharacteristicValue"
    refer="SampleCharacteristicPrimaryKey">
15    <x:selector xpath=". />
      <x:field xpath="SampleCharacteristicIdentifier" />
      </x:keyref>
    </x:element>
    <x:element name="Respondent">
20      <x:complexType>
          <x:sequence>
            <x:element      name="SampleIdentifier"
  type="xs:integer" nillable="false" />
            <x:element      name="Type"      type="xs:string"
25  nillable="false" />
            <x:element      name="DateTime" type="xs:string"
  nillable="false" />
            <x:element      name="Description"
  type="xs:string" nillable="false" />
30      </x:sequence>
    </x:complexType>
    <x:key      name="RespondentPrimaryKey"
  msdata:PrimaryKey="true">
```

17

```
    <xss:selector xpath="." />
    <xss:field xpath="SampleIdentifier" />
  </xss:key>
  <xss:keyref name="SampleRespondent"
6   refer="SamplePrimaryKey">
    <xss:selector xpath="." />
    <xss:field xpath="SampleIdentifier" />
  </xss:keyref>
</xss:element>
10  <xss:element name="SampleSampleCharacteristicValue">
    <xss:complexType>
      <xss:sequence>
        <xss:element name="SampleIdentifier"
type="xs:integer" nillable="false" />
15    <xss:element
      name="SampleCharacteristicValueIdentifier" type="xs:integer" nillable="false" />
        <xss:sequence>
      </xss:complexType>
      <xss:key
20    name="RespondentSampleCharacteristicValuePrimaryKey"
      msdata:PrimaryKey="true">
        <xss:selector xpath="." />
        <xss:field xpath="SampleIdentifier" />
        <xss:field xpath="SampleCharacteristicValueIdentifier" />
25  />
      </xss:key>
      <xss:keyref
        name="SampleCharacteristicValueRespondentSampleCharacteristicValue"
        refer="SampleCharacteristicValuePrimaryKey">
30    <xss:selector xpath="." />
    <xss:field xpath="SampleCharacteristicValueIdentifier" />
  />
</xss:keyref>
```

```
<xs:keyref
  name="SampleSampleSampleCharacteristicValue" refer="SamplePrimaryKey">
  <xs:selector xpath="." />
  <xs:field xpath="SampleIdentifier" />
<5>  </xs:keyref>
</xs:element>
<xs:element name="SubSampleRespondent">
  <xs:complexType>
    <xs:sequence>
<10>    <xs:element name="SampleIdentifier" type="xs:integer" nillable="false" />
    <xs:element name="RespondentIdentifier" type="xs:integer" nillable="true" />
    </xs:sequence>
<15>  </xs:complexType>
  <xs:unique name="SubSampleCompositionPrimaryKey" msdata:PrimaryKey="true">
    <xs:selector xpath="." />
    <xs:field xpath="SampleIdentifier" />
    <xs:field xpath="RespondentIdentifier" />
<20>  </xs:unique>
  <xs:keyref name="SubSampleSubSampleComposition" refer="SamplePrimaryKey">
    <xs:selector xpath="." />
    <xs:field xpath="SampleIdentifier" />
<25>  </xs:keyref>
  <xs:keyref name="RespondentSubSampleRespondent" refer="RespondentPrimaryKey">
    <xs:selector xpath="." />
    <xs:field xpath="RespondentIdentifier" />
<30>  </xs:keyref>
</xs:element>
<xs:element name="AnalysisFramework">
```

19

```
<xs:complexType>
  <xs:sequence>
    <xs:element name="Identifier" type="xs:integer"
      nillable="false"></xs:element>
    <xs:element name="Name" type="xs:string"
      nillable="false" />
    <xs:element name="Type" type="xs:string"
      nillable="false" />
  </xs:sequence>
</xs:complexType>
<xs:key name="AnalysisFrameworkPrimaryKey"
  msdata:PrimaryKey="true">
  <xs:selector xpath="." />
  <xs:field xpath="Identifier" />
</xs:key>
</xs:element>
<xs:element name="Heading">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="Identifier" type="xs:integer"
        nillable="false" />
      <xs:element name="Name" type="xs:string"
        nillable="false" />
      <xs:element name="AnalysisFrameworkIdentifier" type="xs:integer" nillable="false" />
      <xs:element name="Image"
        type="xs:hexBinary" nillable="true" />
      <xs:element name="Type" type="xs:string"
        nillable="false" />
    </xs:sequence>
  </xs:complexType>
  <xs:key name="HeadingPrimaryKey"
    msdata:PrimaryKey="true">
```

20

```
    <xs:selector xpath="." />
    <xs:field xpath="Identifier" />
  </xs:key>
  <xs:keyref          name="AnalysisFrameworkHeading"
5.  refer="AnalysisFrameworkPrimaryKey">
    <xs:selector xpath="." />
    <xs:field xpath="AnalysisFrameworkIdentifier" />
  </xs:keyref>
</xs:element>
10   <xs:element name="HeadingHierarchy">
    <xs:complexType>
      <xs:sequence>
        <xs:element          name="HeadingIdentifier"
type="xs:integer" nullable="false" />
15   <xs:element          name="ChildHeadingIdentifier"
type="xs:integer" nullable="false" />
      </xs:sequence>
    </xs:complexType>
    <xs:key          name="HierarchicalHeadingPrimaryKey"
20  msdata:PrimaryKey="true">
      <xs:selector xpath="." />
      <xs:field xpath="HeadingIdentifier" />
      <xs:field xpath="ChildHeadingIdentifier" />
    </xs:key>
    <xs:keyref          name="HeadingHeadingHierarchy"
25  refer="HeadingPrimaryKey">
      <xs:selector xpath="." />
      <xs:field xpath="HeadingIdentifier" />
    </xs:keyref>
    <xs:keyref          name="HeadingHeadingHierarchy1"
30  refer="HeadingPrimaryKey">
      <xs:selector xpath="." />
      <xs:field xpath="ChildHeadingIdentifier" />
```

21

```
    </xs:keyref>
  </xs:element>
<xs:element name="HeadingConcept">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="HeadingIdentifier"
5      type="xs:integer" nullable="false" />
      <xs:element name="Terminated"
        type="xs:boolean" nullable="false" />
10     <xs:sequence>
      </xs:complexType>
      <xs:key name="ConceptHeadingPrimaryKey"
        msdata:PrimaryKey="true">
        <xs:selector xpath="/" />
15      <xs:field xpath="HeadingIdentifier" />
        </xs:key>
        <xs:keyref name="HeadingHeadingConcept"
          refer="HeadingPrimaryKey">
          <xs:selector xpath="." />
20        <xs:field xpath="HeadingIdentifier" />
          </xs:keyref>
        </xs:element>
      <xs:element name="HeadingConceptSample">
        <xs:complexType>
25        <xs:sequence>
          <xs:element name="HeadingIdentifier"
            type="xs:integer" nullable="false" />
          <xs:element name="SampleIdentifier"
            type="xs:integer" nullable="true" />
30        <xs:sequence>
          </xs:complexType>
          <xs:unique name="ConceptHeadingRespondentPrimaryKey"
            msdata:PrimaryKey="true">
```

22

```
        <xs:selector xpath="." />
        <xs:field xpath="HeadingIdentifier" />
        <xs:field xpath="SampleIdentifier" />
    </xs:unique>
5      <xs:keyref      name="HeadingHeadingConceptSample"
refer="HeadingPrimaryKey">
        <xs:selector xpath="." />
        <xs:field xpath="HeadingIdentifier" />
    </xs:keyref>
10     <xs:keyref      name="SampleHeadingConceptSample"
refer="SamplePrimaryKey">
        <xs:selector xpath="." />
        <xs:field xpath="SampleIdentifier" />
    </xs:keyref>
15     </xs:element>
        <xs:element name="SegmentSort">
            <xs:complexType>
                <xs:sequence>
                    <xs:element name="Identifier" type="xs:integer"
20    nillable="false" />
                    <xs:element
name="CategoryBrandHeadingIdentifier" type="xs:integer" nillable="false" />
                    <xs:element      name="SampleIdentifier"
type="xs:integer" nillable="true" />
25      </xs:sequence>
            </xs:complexType>
            <xs:key      name="SegmentSortPrimaryKey"
msdata:PrimaryKey="true">
                <xs:selector xpath="." />
                <xs:field xpath="Identifier" />
            </xs:key>
            <xs:keyref      name="HeadingSegmentSort"
refer="HeadingPrimaryKey">
```

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```
    <xs:selector xpath="." />
    <xs:field xpath="CategoryBrandHeadingIdentifier" />
  </xs:keyref>
  <xs:keyref name="SampleSegmentSort"
5   refer="SamplePrimaryKey">
    <xs:selector xpath="." />
    <xs:field xpath="SampleIdentifier" />
  </xs:keyref>
</xs:element>
10  <xs:element name="SegmentSortComposition">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="SegmentSortIdentifier"
type="xs:integer" nullable="false" />
15    <xs:element
      name="BrandPictureHeadingIdentifier" type="xs:integer" nullable="false" />
        </xs:sequence>
      </xs:complexType>
      <xs:key name="SegmentSortCompositionPrimaryKey"
20    msdata:PrimaryKey="true">
        <xs:selector xpath="." />
        <xs:field xpath="SegmentSortIdentifier" />
        <xs:field xpath="BrandPictureHeadingIdentifier" />
      </xs:key>
25    <xs:keyref name="SegmentSortSegmentSortComposition"
      refer="SegmentSortPrimaryKey">
        <xs:selector xpath="." />
        <xs:field xpath="SegmentSortIdentifier" />
      </xs:keyref>
30    <xs:keyref name="HeadingSegmentSortComposition"
      refer="HeadingPrimaryKey">
        <xs:selector xpath="." />
        <xs:field xpath="BrandPictureHeadingIdentifier" />
```

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```
    </xs:keyref>
  </xs:element>
<xs:element name="Commentary">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="Identifier" type="xs:integer"
      nillable="false"></xs:element>
      <xs:element
      name="AnalysisFrameworkIdentifier" type="xs:integer" nillable="false" />
      <xs:element name="Type" type="xs:string"
      nillable="false" />
      <xs:element name="Text" type="xs:string"
      nillable="false" />
    </xs:sequence>
  </xs:complexType>
  <xs:key name="CommentaryPrimaryKey"
  msdata:PrimaryKey="true">
    <xs:selector xpath="." />
    <xs:field xpath="Identifier" />
  </xs:key>
  <xs:keyref name="AnalysisFrameworkCommentary"
  refer="AnalysisFrameworkPrimaryKey">
    <xs:selector xpath="." />
    <xs:field xpath="AnalysisFrameworkIdentifier" />
  </xs:keyref>
</xs:element>
<xs:element name="CommentaryAnalysisFramework">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="CommentaryIdentifier"
      type="xs:integer" nillable="false" />
      <xs:element name="HeadingIdentifier"
      type="xs:integer" nillable="true" />
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

25

```
        <xs:element      name="SampleIdentifier"
type="xs:integer" nillable="true" />
        </xs:sequence>
    </xs:complexType>
5      <xs:key name="AnalysisFrameworkCommentaryPrimaryKey"
msdata:PrimaryKey="true">
        <xs:selector xpath="." />
        <xs:field xpath="CommentaryIdentifier" />
    </xs:key>
10     <xs:keyref
        name="CommentaryCommentaryAnalysisFramework"
refer="CommentaryPrimaryKey">
        <xs:selector xpath="." />
        <xs:field xpath="CommentaryIdentifier" />
15     </xs:keyref>
        <xs:keyref name="HeadingCommentaryAnalysisFramework"
refer="HeadingPrimaryKey">
        <xs:selector xpath="." />
        <xs:field xpath="HeadingIdentifier" />
20     </xs:keyref>
        <xs:keyref name="SampleCommentaryAnalysisFramework"
refer="SamplePrimaryKey">
        <xs:selector xpath="." />
        <xs:field xpath="SampleIdentifier" />
25     </xs:keyref>
        </xs:element>
        <xs:element name="CommentarySegmentSort">
            <xs:complexType>
                <xs:sequence>
30          <xs:element      name="CommentaryIdentifier"
type="xs:integer" nillable="false" />
          <xs:element      name="SegmentSortIdentifier"
type="xs:integer" nillable="false" />
```

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```
          <xs:element      name="HeadingIdentifier"
type="xs:integer" nullable="false" />
          </xs:sequence>
          </xs:complexType>
5           <xs:key      name="CommentarySegmentSortPrimaryKey"
msdata:PrimaryKey="true">
          <xs:selector xpath="." />
          <xs:field xpath="CommentaryIdentifier" />
          </xs:key>
10          <xs:keyref  name="CommentaryCommentarySegmentSort"
refer="CommentaryPrimaryKey">
          <xs:selector xpath="." />
          <xs:field xpath="CommentaryIdentifier" />
          </xs:keyref>
15          <xs:keyref  name="SegmentSortCommentarySegmentSort"
refer="SegmentSortPrimaryKey">
          <xs:selector xpath="." />
          <xs:field xpath="SegmentSortIdentifier" />
          </xs:keyref>
20          <xs:keyref  name="HeadingCommentarySegmentSort"
refer="HeadingPrimaryKey">
          <xs:selector xpath="." />
          <xs:field xpath="HeadingIdentifier" />
          </xs:keyref>
25          </xs:element>
          <xs:element name="CommentaryConceptPredecessor">
          <xs:complexType>
          <xs:sequence>
          <xs:element      name="CommentaryIdentifier"
30 type="xs:integer" nullable="false" />
          <xs:element
name="PredecessorHeadingIdentifier" type="xs:integer" nullable="false" />
```

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```
        <xss:element
      name="SuccessorHeadingIdentifier" type="xs:integer" nillable="false" />
        </xss:sequence>
      </xss:complexType>
5      <xss:keyref
      name="CommentaryCommentaryConceptPredecessor"
      refer="CommentaryPrimaryKey">
        <xss:selector xpath="." />
        <xss:field xpath="CommentaryIdentifier" />
10     </xss:keyref>
        <xss:keyref
      name="HeadingCommentaryConceptPredecessor" refer="HeadingPrimaryKey">
        <xss:selector xpath="." />
        <xss:field xpath="PredecessorHeadingIdentifier" />
15     </xss:keyref>
        <xss:keyref
      name="HeadingCommentaryConceptPredecessor1"
      refer="HeadingPrimaryKey">
        <xss:selector xpath="." />
20     <xss:field xpath="SuccessorHeadingIdentifier" />
        </xss:keyref>
        </xss:element>
        <xss:element name="Query">
          <xss:complexType>
25          <xss:sequence>
            <xss:element name="Identifier" type="xs:integer"
nillable="false" />
            <xss:element name="Name" type="xs:string"
nillable="false" />
30            <xss:element name="Type" type="xs:string"
nillable="false" />
            </xss:sequence>
          </xss:complexType>
        </xss:element>
      </xss:sequence>
    </xss:complexType>
  </xss:element>
</xss:sequence>
</xss:complexType>
```

```
  <xs:key name="QueryPrimaryKey"
  msdata:PrimaryKey="true">
    <xs:selector xpath="/" />
    <xs:field xpath="Identifier" />
  5   </xs:key>
  </xs:element>
  <xs:element name="QueryAnalysisFramework">
    <xs:complexType>
      <xs:sequence>
  10    <xs:element name="QueryIdentifier"
        type="xs:integer" nullable="false" />
        <xs:element
          name="AnalysisFrameworkIdentifier" type="xs:integer" nullable="false" />
        </xs:sequence>
  15    </xs:complexType>
    <xs:key name="QueryAnalysisFrameworkPrimaryKey"
  msdata:PrimaryKey="true">
      <xs:selector xpath="/" />
      <xs:field xpath="QueryIdentifier" />
  20      <xs:field xpath="AnalysisFrameworkIdentifier" />
      </xs:key>
      <xs:keyref name="QueryQueryAnalysisFramework"
        refer="QueryPrimaryKey">
        <xs:selector xpath="/" />
  25      <xs:field xpath="QueryIdentifier" />
      </xs:keyref>
      <xs:keyref
        name="AnalysisFrameworkQueryAnalysisFramework"
        refer="AnalysisFrameworkPrimaryKey">
  30        <xs:selector xpath="/" />
        <xs:field xpath="AnalysisFrameworkIdentifier" />
      </xs:keyref>
    </xs:element>
```

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```
<x:element name="QueryHeading">
  <x:complexType>
    <x:sequence>
      <x:element name="QueryIdentifier"
5      type="xs:integer" nillable="false" />
      <x:element name="HeadingIdentifier"
      type="xs:integer" nillable="false" />
      </x:sequence>
    </x:complexType>
    <x:key name="QueryHeadingPrimaryKey"
10    metadata:PrimaryKey="true">
      <x:selector xpath="." />
      <x:field xpath="QueryIdentifier" />
      <x:field xpath="HeadingIdentifier" />
15    </x:key>
    <x:keyref name="QueryQueryHeading"
      refer="QueryPrimaryKey">
      <x:selector xpath="." />
      <x:field xpath="QueryIdentifier" />
20    </x:keyref>
    <x:keyref name="HeadingQueryHeading"
      refer="HeadingPrimaryKey">
      <x:selector xpath="." />
      <x:field xpath="HeadingIdentifier" />
25    </x:keyref>
  </x:element>
  <x:element name="QuerySample">
    <x:complexType>
      <x:sequence>
30      <x:element name="QueryIdentifier"
      type="xs:integer" nillable="false" />
      <x:element name="SampleIdentifier"
      type="xs:integer" nillable="true" />
```

30

```
        </xs:sequence>
    </xs:complexType>
    <xs:unique name="QuerySamplePrimaryKey"
msdata:PrimaryKey="true">
    5          <xs:selector xpath="/" />
    <xs:field xpath="QueryIdentifier" />
    <xs:field xpath="SampleIdentifier" />
    </xs:unique>
    <xs:keyref name="QueryQuerySample"
10     refer="QueryPrimaryKey">
        <xs:selector xpath="/" />
        <xs:field xpath="QueryIdentifier" />
        </xs:keyref>
        <xs:keyref name="SampleQuerySample"
15     refer="SamplePrimaryKey">
        <xs:selector xpath="/" />
        <xs:field xpath="SampleIdentifier" />
        </xs:keyref>
    </xs:element>
20     <xs:element name="QueryCommentary">
        <xs:complexType>
            <xs:sequence>
                <xs:element name="QueryIdentifier"
type="xs:integer" nillable="false" />
                <xs:element name="CommentaryType"
25     type="xs:string" nillable="false" />
                    </xs:sequence>
            </xs:complexType>
            <xs:key name="QueryCommentaryPrimaryKey"
30     msdata:PrimaryKey="true">
                <xs:selector xpath="/" />
                <xs:field xpath="QueryIdentifier" />
            </xs:key>
```

```
      <xs:keyref           name="QueryQueryCommentary"
refer="QueryPrimaryKey">
          <xs:selector xpath="." />
          <xs:field xpath="QueryIdentifier" />
5       </xs:keyref>
</xs:element>
<xs:element name="QuerySegmentSort">
    <xs:complexType>
        <xs:sequence>
10      <xs:element           name="QueryIdentifier"
type="xs:integer" nillable="false" />
          <xs:element           name="ResultType"
type="xs:string" nillable="false" />
          <xs:element           name="ScopeType"
15      type="xs:string" nillable="false" />
          <xs:element           name="ParentHeadingsOnly"
type="xs:boolean" nillable="false" />
          <xs:sequence>
</xs:complexType>
20      <xs:key           name="QuerySegmentSortPrimaryKey"
msdata:PrimaryKey="true">
          <xs:selector xpath="." />
          <xs:field xpath="QueryIdentifier" />
</xs:key>
25      <xs:keyref           name="QueryQuerySegmentSort"
refer="QueryPrimaryKey">
          <xs:selector xpath="." />
          <xs:field xpath="QueryIdentifier" />
</xs:keyref>
30      </xs:element>
<xs:element name="QueryText">
    <xs:complexType>
        <xs:sequence>
```

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```
          <xs:element name="QueryIdentifier"
type="xs:integer" nillable="false" />
          <xs:element name="searchFor" type="xs:string"
nillable="false" />
5          <xs:element name="MatchCase"
type="xs:boolean" nillable="false" />
          <xs:element name="FindWholeWordsOnly"
type="xs:boolean" nillable="false" />
          <xs:element name="CommentaryType"
10 type="xs:string" nillable="false" />
          <xs:element name="ScopeType"
type="xs:string" nillable="false" />
          </xs:sequence>
</xs:complexType>
15 <xs:key name="QueryTextPrimaryKey"
msdata:PrimaryKey="true">
          <xs:selector xpath="." />
          <xs:field xpath="QueryIdentifier" />
</xs:key>
20 <xs:keyref name="QueryQueryText"
refer="QueryPrimaryKey">
          <xs:selector xpath="." />
          <xs:field xpath="QueryIdentifier" />
</xs:keyref>
25 </xs:element>
<xs:element name="QuerySampleCharacteristicValue">
          <xs:complexType>
          <xs:sequence>
          <xs:element name="QueryIdentifier"
30 type="xs:integer" nillable="false" />
          <xs:element
name="SampleCharacteristicValueIdentifier" type="xs:integer" nillable="false" />
          </xs:sequence>
```

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```
</xs:complexType>
<xs:key
  name="QuerySampleCharacteristicValuePrimaryKey"
  msdata:PrimaryKey="true">
  5          <xs:selector xpath="." />
          <xs:field xpath="QueryIdentifier" />
          <xs:field  xpath="SampleCharacteristicValueIdentifier" />
        />

        </xs:key>
  10         <xs:keyref  name="QueryQuerySampleCharacteristicValue"
refer="QueryPrimaryKey">
          <xs:selector xpath="." />
          <xs:field xpath="QueryIdentifier" />
        </xs:keyref>
  15         <xs:keyref
  name="SampleCharacteristicValueQuerySampleCharacteristicValue"
refer="SampleCharacteristicValuePrimaryKey">
          <xs:selector xpath="." />
          <xs:field  xpath="SampleCharacteristicValueIdentifier" />
        20      />

          </xs:keyref>
        </xs:element>
        <xs:element name="Sample">
          <xs:complexType>
  25          <xs:sequence>
            <xs:element name="Identifier" type="xs:integer" />
          />

            <xs:element name="Name" type="xs:string" />
          </xs:sequence>
  30          <xs:complexType>
          <xs:key
  name="SamplePrimaryKey"
  msdata:PrimaryKey="true">
            <xs:selector xpath="." />
```

```
<xss:field xpath="Identifier" />
</xss:key>
</xss:element>
</xss:schema>
```

5 While this invention has been described in connection with specific embodiments thereof, it will be understood that it is capable of further modification(s). This application is intended to cover any variations uses or adaptations of the invention following in general, the principles of the invention and including such departures from the present disclosure as come within known or customary practice within the art to which the invention pertains and as may be applied to the essential features hereinbefore set forth.

10 As the present invention may be embodied in several forms without departing from the spirit of the essential characteristics of the invention, it should be understood that the above described embodiments are not to limit the present invention unless otherwise specified, but rather should be construed broadly within the spirit and scope of the invention as defined in the appended claims. Various modifications and equivalent arrangements are intended to be included within the spirit and scope of the invention and appended claims. Therefore, the specific embodiments are to be understood to be illustrative of the many ways in

15 which the principles of the present invention may be practiced. In the following claims, means-plus-function clauses are intended to cover structures as performing the defined function and not only structural equivalents, but also equivalent structures. For example, although a nail and a screw may not be structural equivalents in that a nail employs a cylindrical surface to secure wooden parts together, whereas a screw employs a helical surface to secure wooden parts together, in the environment of fastening wooden parts, a nail and a screw are equivalent structures.

20

25

30 "Comprises/comprising" when used in this specification is taken to specify the presence of stated features, integers, steps or components but does not preclude the presence or addition of one or more other features, integers, steps, components or groups thereof.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A method of inputting data into a qualitative research tool, the method comprising the step of:
 - 5 inputting the data in association with a heading.
2. A method as claimed in claim 1, wherein the heading is a concept heading.
- 10 3. A method as claimed in claim 2, wherein the concept heading comprises a concept and processor concept.
- 15 4. A method of inputting data into a qualitative research tool, the method comprising the step of:
inputting the data in Commentary format, such as an AVI format.
- 20 5. A method as claimed in claim 4, wherein the AVI format represents Articulation, Verbatim or Interpretation (AVI).
- 25 6. A method as claimed in claim 4 or 5, wherein
Articulation, substantially what the research participant said, preferably expressed in the words of the researcher,
Verbatim, substantially a reproduction of substantially all, or a representative part, of a respondent's comment, such as a direct quotation from a research participant, and
30 Interpretation, substantially the researcher's observations, interpretations and conclusions on what the research participants said.

7. A method of analysing data input into a qualitative research tool, the method comprising the step of
analysing the data input in accordance with commentary, such as AVI.

5

8. A method as claimed in claim 7, wherein the step of analysing is conducted as the data is gathered.

10 9. A method as claimed in claim 7 or 8, further including the step of:
marking-up on an originally imported document.

15 10. A method as claimed in claim 9, wherein the mark-up is conducted as research is conducted.

11. A method as claimed in claim 9 or 10, wherein the marking-up enables data to be allocated to a selected heading or commentary, such as AVI.

20

12. A method of inputting data into a qualitative research tool, the method comprising the step of:
defining relationships between data, based on unique Indicia.

25

13. A method as claimed in claim 12, wherein the Indicia represents a problem statement, brand and / or picture.

30 14. A qualitative research tool, said tool including:
processor means adapted to operate in accordance with a predetermined instruction set,

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said tool, in conjunction with said instruction set, being adapted to perform the method as claimed in any one of claims 1 to 13.

5 15. A computer program product including:

a computer usable medium having computer readable program code and computer readable system code embodied on said medium for facilitating qualitative research analysis in conjunction with a data processing system, said computer program product including:

10 computer readable code within said computer usable medium for performing the method as claimed in any one of claims 1 to 13.

16. A schema as herein disclosed.

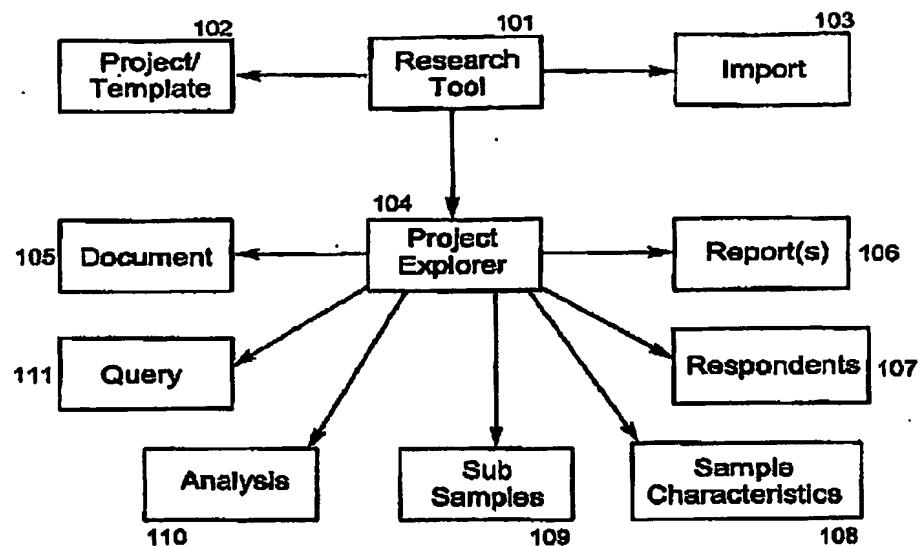
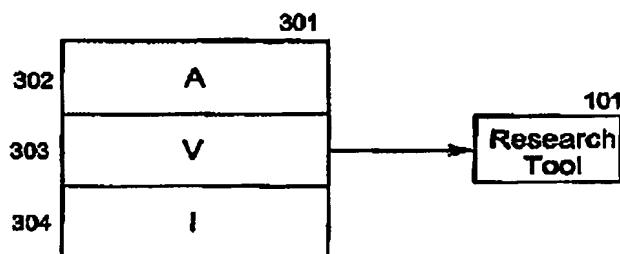
15

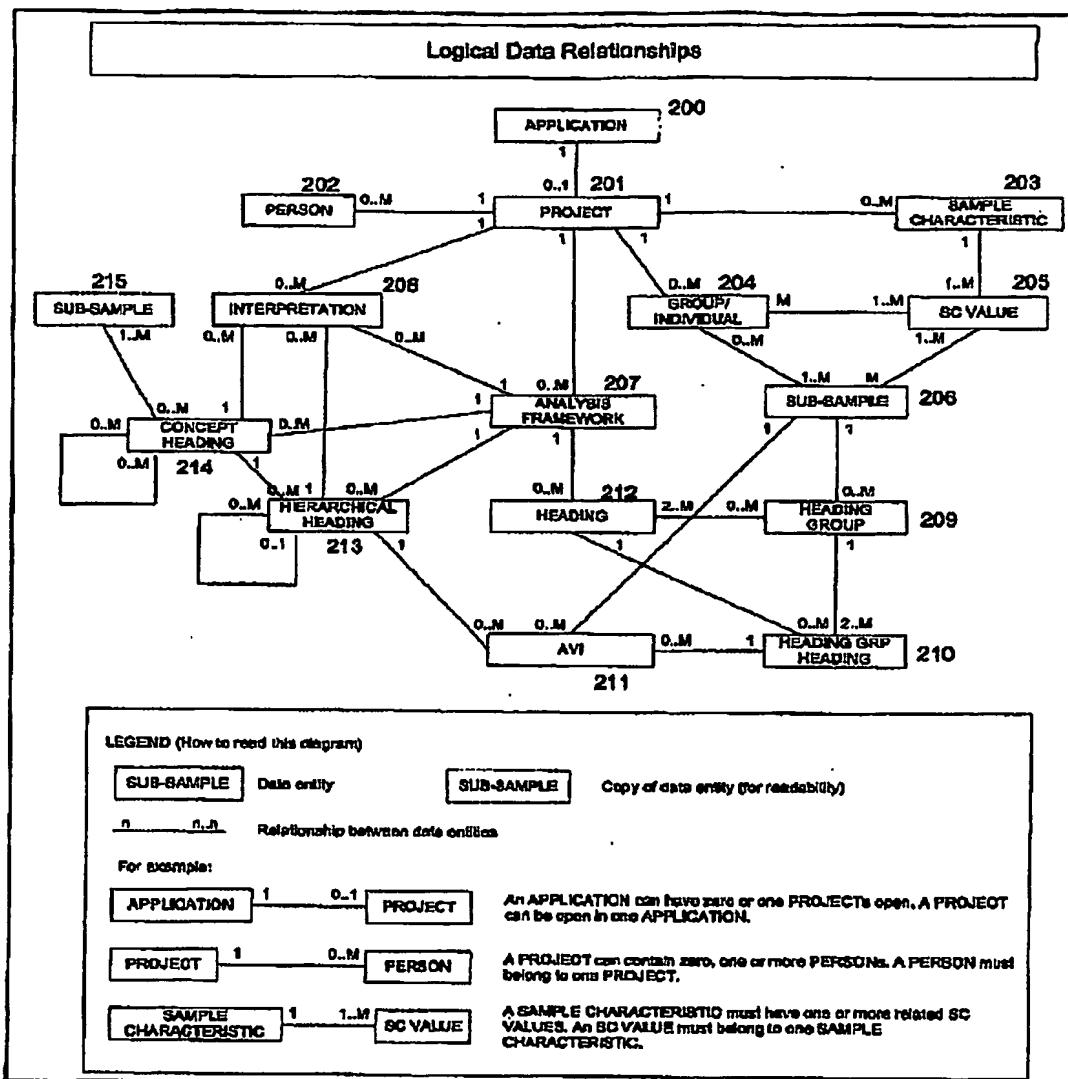
DATED THIS 22nd day of October 2003

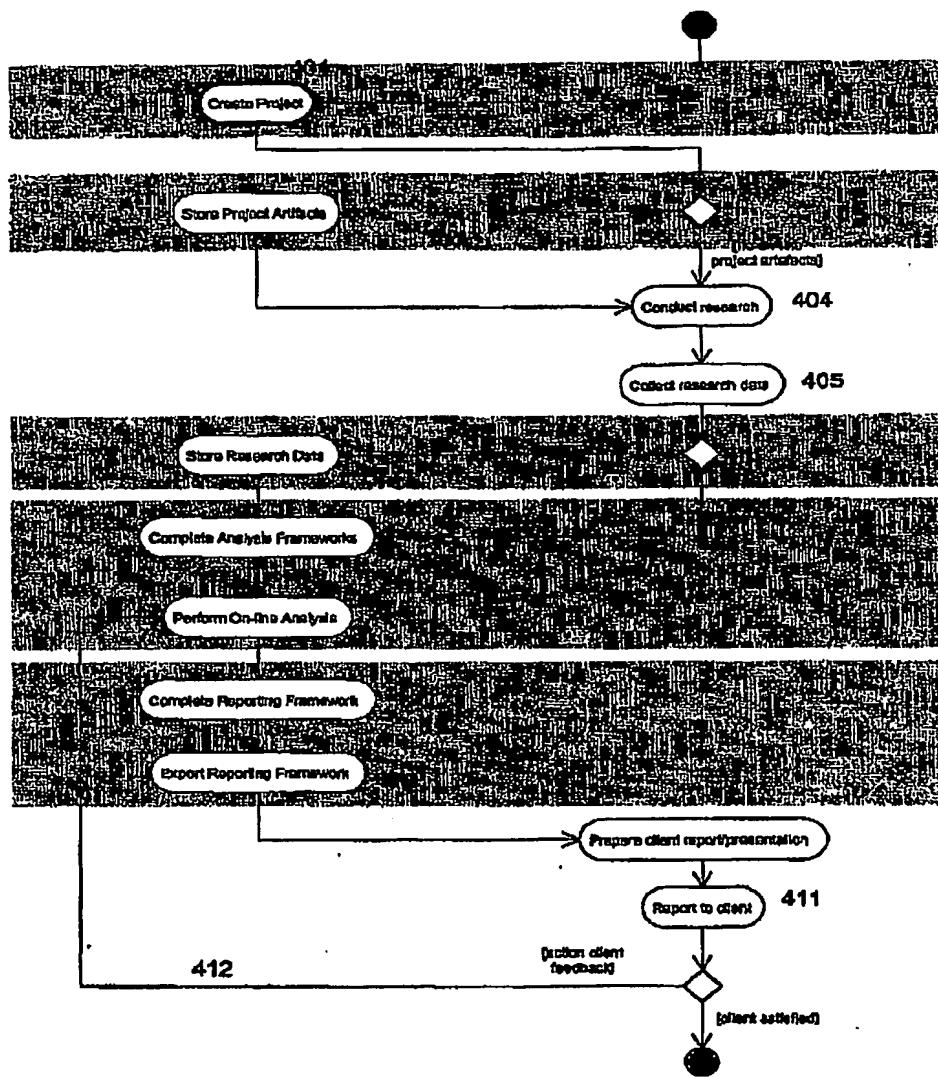
20

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25

**Figure 1****Figure 3**

**Figure 2**



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Figure 4

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